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IP AUTHORITY, LLC  
RAMRAJ SOUNDARARAJAN  
4821A Eisenhower Ave  
Alexandria, VA 22304

EXAMINER
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MORRISON, JAY A

ART UNIT	PAPER NUMBER
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2168

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03/03/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

mn

# Office Action Summary

Application No.

10/711,808

Applicant(s)

KLEWEIN ET AL.

Examiner

JAY A. MORRISON

Art Unit

2168

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 26-49 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 26-49 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Remarks*

1. Claims 26-49 are pending.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 26-32,34-45 and 47-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ganesh et al. ('Ganesh' hereinafter) (Patent Number 6,957,236 B1)

in view of Odom et al. ('Odom' hereinafter) (Patent Number 6,516,320 B1) and further in view of Najork et al. ('Najork' hereinafter) (Patent Number 7,007,027).

As per claim 26, Ganesh teaches

A computer-based method to version a node ... and locate a versioned node ... in a storage architecture managing node ..., said computer-based method implemented in computer readable program code stored in computer memory, said computer-based method comprising the steps of: (see abstract and background)

a. receiving a node modification request for a node ... from a database system;  
(transaction to modify, column 8, lines 26-30)

b. versioning said node ... by copying, to a storage, a node ... to which said node modification request is to be made and labeling said copied node ... with an identifier;  
(copy loaded, column 4, lines 61-65; version information, column 4, lines 41-54)

and d. outputting said located labeled node. (column 2, lines 58-62)

Ganesh does not explicitly indicate "c. locating said labeled node ... via said identifier and a hash on said node"

However, Odom discloses "c. locating said labeled node ... via said identifier and a hash on said node" (dynamic hash, column 4, lines 45-64).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Ganesh and Odom because using the steps of "c. locating said labeled node ... via said identifier and a hash on said node" would have given those skilled in the art the tools to improve the invention by increasing the speed

of access. This gives the user the advantage of not having to wait long periods for results.

Neither Ganesh nor Odom explicitly indicate "range".

However, Najork discloses "range" (range, column 2, lines 28-42).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Ganesh, Odom and Najork because using the steps of "range" would have given those skilled in the art the tools to improve the invention by allowing quick access to many nodes. This gives the user the advantage of more efficient access to nodes.

As per claim 27,

said identifier is any of the following: a timestamp or a LSN. (column 4, lines 41-54)

As per claim 28, Ganesh teaches

said storage is a transient storage. (column 4, lines 61-65)

As per claim 29, Ganesh teaches

said node modification request is any of the following: a node insertion request, a node update request, or a node deletion request. (column 8, lines 26-30)

As per claim 30, Ganesh teaches

said method is implemented across a network. (column 12, lines 2-13)

As per claim 31, Ganesh teaches

said network is any of the following: a local area network, a wide area network, or the Internet. (column 12, lines 2-13)

As per claim 32,

Ganesh does not explicitly indicate "said node ... are associated with hierarchical node data that is derived from any of: a structured document, a computer network, or a directory file system."

However, Odom discloses "said node ... are associated with hierarchical node data that is derived from any of: a structured document, a computer network, or a directory file system" (column 8, lines 57-66).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Ganesh and Odom because using the steps of "said node ... are associated with hierarchical node data that is derived from any of: a structured document, a computer network, or a directory file system" would have given those skilled in the art the tools to improve the invention by allowing many different structures to be used. This gives the user the advantage of being able to utilize the method on a variety of structures.

Neither Ganesh nor Odom explicitly indicate "ranges".

However, Najork discloses "ranges" (range, column 2, lines 28-42).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Ganesh, Odom and Najork because using the steps of "ranges" would have given those skilled in the art the tools to improve the invention by allowing quick access to many nodes. This gives the user the advantage of more efficient access to nodes.

As per claim 34, Ganesh teaches

A computer-based method to version a node ... and to locate a versioned node ... in a storage architecture managing node ... via a node id ... index, said each node assigned a node id value and a set of nodes forming a node ..., each entry in said node id ... index pointing to a node ... and its ... identifier, RID, said computer-based method implemented in computer readable program code stored in computer memory, said method comprising the steps of: (see abstract and background)

a. receiving a node modification request for a ...; (transaction to modify, column 8, lines 26-30)

b. versioning said ... associated with said node modification request by shadowing nodes in said ... based on RID and assigning a time identifier to copies of said ...; (copy loaded, column 4, lines 61-65; version information and time, column 4, lines 41-54)

c. locating a node in said shadowed ... via said time identifier and RIDs; (column 2, lines 50-62)

and d. outputting said located node. (column 2, lines 58-62)

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Ganesh does not explicitly indicate "to a Version Hash Table".

However, Odom discloses "to a Version Hash Table" (dynamic hash, column 4, lines 45-64).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Ganesh and Odom because using the steps of "to a Version Hash Table" would have given those skilled in the art the tools to improve the invention by increasing the speed of access. This gives the user the advantage of not having to wait long periods for results.

Neither Ganesh nor Odom explicitly indicate "range".

However, Najork discloses "range" (range, column 2, lines 28-42).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Ganesh, Odom and Najork because using the steps of "range" would have given those skilled in the art the tools to improve the invention by allowing quick access to many nodes. This gives the user the advantage of more efficient access to nodes.

As per claim 35,

said time identifier is any of the following: timestamp or LSN. (column 4, lines 41-54)

As per claim 36,

new readers, after a modification, access current nodes through a new RID.

(column 4, line 61 through column 5, line 8)



As per claim 37,

previous readers access old nodes via the same RID ... to locate the shadowed copy. (column 4, line 61 through column 5, line 8)

Ganesh does not explicitly indicate "and hashing the same RID ... in said Version Hash Table."

However, Odom discloses "and hashing the same RID ... in said Version Hash Table" (column 4, lines 45-64).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Ganesh and Odom because using the steps of "and hashing the same RID ... in said Version Hash Table" would have given those skilled in the art the tools to improve the invention by increasing the speed of access. This gives the user the advantage of not having to wait long periods for results.

As per claim 38,

when modifications cause nodes in a ... to be moved to a new RID, previous readers are redirected from the new RID to an old RID (column 4, line 61 through column 5, line 8).

Ganesh does not explicitly indicate "via a Redirection Hash Table."

However, Odom discloses "via a Redirection Hash Table" (column 4, lines 45-64).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Ganesh and Odom because using the steps of "via a Redirection Hash Table" would have given those skilled in the art the tools to improve the invention by increasing the speed of access. This gives the user the advantage of not having to wait long periods for results.

Neither Ganesh nor Odom explicitly indicate "range".

However, Najork discloses "range" (range, column 2, lines 28-42).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Ganesh, Odom and Najork because using the steps of "range" would have given those skilled in the art the tools to improve the invention by allowing quick access to many nodes. This gives the user the advantage of more efficient access to nodes.

As per claim 39,

when modifications cause nodes in a ... to be moved to a new RID, previous readers are redirected from the new RID to an old RID via an index that describes where old versions are (column 4, line 61 through column 5, line 8).

Ganesh does not explicitly indicate "in said Version Hash Table."

However, Odom discloses "in said Version Hash Table" (column 4, lines 45-64).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Ganesh and Odom because using the steps of "in said Version Hash Table" would have given those skilled in the art the tools to improve the

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invention by increasing the speed of access. This gives the user the advantage of not having to wait long periods for results.

Neither Ganesh nor Odom explicitly indicate "range".

However, Najork discloses "range" (range, column 2, lines 28-42).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Ganesh, Odom and Najork because using the steps of "range" would have given those skilled in the art the tools to improve the invention by allowing quick access to many nodes. This gives the user the advantage of more efficient access to nodes.

As per claim 40,

said shadowed nodes are copied to a transient storage. (column 4, lines 61-65)

As per claim 41,

said method is implemented across a network. (column 12, lines 2-13)

As per claim 42,

said network is any of the following: a local area network, a wide area network, or the Internet. (column 12, lines 2-13)

As per claim 43,

for ... deletions, the ... being deleted is moved to reserved RID RIDFF. (column 4, lines 54-60)

Neither Ganesh nor Odom explicitly indicate "range".

However, Najork discloses "range" (range, column 2, lines 28-42).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Ganesh, Odom and Najork because using the steps of "range" would have given those skilled in the art the tools to improve the invention by allowing quick access to many nodes. This gives the user the advantage of more efficient access to nodes.

As per claim 44,

Ganesh does not explicitly indicate "a reader hashes a Redirection Hash Table on .sub.RIDFF to find a correct Version Hash Table entry."

However, Odom discloses "a reader hashes a Redirection Hash Table on .sub.RIDFF to find a correct Version Hash Table entry" (column 4, lines 45-64).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Ganesh and Odom because using the steps of "a reader hashes a Redirection Hash Table on .sub.RIDFF to find a correct Version Hash Table entry" would have given those skilled in the art the tools to improve the invention by increasing the speed of access. This gives the user the advantage of not having to wait long periods for results.

As per claim 45,

Ganesh does not explicitly indicate "said node ... are associated with hierarchical node data that is derived from any of: a structured document, a computer network, or a directory file system."

However, Odom discloses "said node ... are associated with hierarchical node data that is derived from any of: a structured document, a computer network, or a directory file system" (column 8, lines 57-66).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Ganesh and Odom because using the steps of "said node ... are associated with hierarchical node data that is derived from any of: a structured document, a computer network, or a directory file system" would have given those skilled in the art the tools to improve the invention by allowing many different structures to be used. This gives the user the advantage of being able to utilize the method on a variety of structures.

Neither Ganesh nor Odom explicitly indicate "ranges".

However, Najork discloses "ranges" (range, column 2, lines 28-42).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Ganesh, Odom and Najork because using the steps of "ranges" would have given those skilled in the art the tools to improve the invention by allowing quick access to many nodes. This gives the user the advantage of more efficient access to nodes.

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As per claim 47,

said node modification request is any of the following: a node insertion request, a node update request, or a node deletion request. (column 8, lines 26-30)

As per claim 48,

This claim is rejected on grounds corresponding to the arguments given above for rejected claim 34 and is similarly rejected.

As per claim 49,

This claim is rejected on grounds corresponding to the arguments given above for rejected claim 26 and is similarly rejected.

4. Claims 33 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ganesh et al. ('Ganesh' hereinafter) (Patent Number 6,957,236 B1) in view of Odom et al. ('Odom' hereinafter) (Patent Number 6,516,320 B1) and further in view of Najork et al. ('Najork' hereinafter) (Patent Number 7,007,027) and further in view of Chang et al. ('Chang' hereinafter) (Patent Number 6,584,459).

As per claim 33,

Neither Ganesh, Odom, nor Najork explicitly indicate "said structured document is an XML document."

However, Chang discloses "said structured document is an XML document" (column 3, lines 48-60).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Ganesh, Odom, Najork and Chang because using the steps of "said structured document is an XML document" would have given those skilled in the art the tools to improve the invention by improving interoperability. This gives the user the advantage of being able to use the format across platforms.

As per claim 46,

This claim is rejected on grounds corresponding to the arguments given above for rejected claim 33 and is similarly rejected.

### ***Response to Arguments***

5. Applicant's arguments filed 12/4/07 have been fully considered but they are not persuasive.

6. Applicant argues that Najork does not teach "node ranges" and merely teaches a key range" and that these two things cannot be equated. It is respectfully submitted that the key range disclosed by Najork is equivalent to the manner in which the Applicant represents node ranges. In explanation, the keys in the index nodes of the b-tree structure of Najork (column 2, lines 38-42; column 9, lines 58-60) respectfully point to nodes within the b-tree structure (column 10, lines 28-42 and 64-68). These nodes

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(figure 3D, items D1-D8) are equivalent to nodes in the instant application, and are referenced by the key ranges in the index nodes (column 2, lines 38-42; column 9, lines 58-60). In database terms, the key values in the index nodes are foreign keys (figure 3D, items I1-I7) and the key values in the data nodes are primary keys (figure 3D, items D1-D8) or part of the data itself. Considering this fact in the analysis of the argument that the key ranges are not equivalent to node ranges shows that the key ranges are actually an element of the node used to represent the range of nodes represented.

7. Also, in analyzing how the Applicant represents the node ranges it is respectfully submitted that the same method of representing ranges of nodes is used:

The present invention provides a mechanism for transient versioning in architectures that manage node ranges. In architectures that manage node ranges, each node is assigned a node ID value, and a set of nodes form a range of node IDs called a node range. To find a node among a set of node ranges, an index is used. This index, called node ID range index, points to the set of node ranges. Each entry in the index describes one range and points to where the range is located. Individual nodes are located by finding the correct range in the index. (paragraph [0025], instant application)

From the Applicant's description it is clear that the "node ID value" is equivalent to the key values used in Najork, and that in the instant application these node ID's are used in an index called the "node ID range index", which is the same as the disclosed key range in Najork. Therefore it is respectfully submitted that Najork does in fact disclose the claimed "node ranges".



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8. Applicant argues that Ganesh does not teach "assigning a time identifier to copies of said range; wherein a node in said shadowed range is locatable via said time identifier and RID's". It is respectfully submitted that the claimed assigning of a time identifier and subsequent use of time identifier and RID to locate a node does not specify the manner in which the time identifier is used in such a process. Since a RID, or equivalently a primary key as described in the answer to the Najork argument above, this type of ID is typically generated automatically as a unique value or by using portions of the data fields to generate a unique value. Ganesh describes the time values in relation to versioning the blocks of nodes, or associating the blocks to the time values. It is respectfully submitted that the inclusion of the time into the generation of is obvious over Ganesh in view of the Najork reference in building key value (or RID) in some manner using the time values in order to locate the node in the block.

9. The Applicant's remaining arguments regarding the remaining claims all relate to the fact that Najork does not teach "node ranges" contained in the various limitations, and the Applicant is respectfully directed to the above arguments relating to Najork teaching these node ranges as key ranges.

### ***Conclusion***

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

The prior art made of record, listed on form PTO-892, and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jay A. Morrison whose telephone number is (571) 272-7112. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Vo can be reached on (571) 272-3642. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



TIM VO  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100

Jay Morrison  
TC2100

Tim Vo  
TC2100